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| 09/880,365 | 06/13/2001 | Mark B. Hanna | 004578.1122 | 7006 |

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| EXAMINER |
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ROSSI, JESSICA

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| ART UNIT | PAPER NUMBER |
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1733

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/880,365

Applicant(s)

HANNA, MARK B.

Examiner

Jessica L. Rossi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/29/04, RCE.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 15-24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-14 is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

1. The request filed on 3/29/04 for a RCE under 37 CFR 1.114 based on parent Application No. 09/880,365 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Amendment

2. This action is in response to the amendment dated 3/29/04. Claims 1-24 are pending. Claims 15-24 are withdrawn from further consideration as set forth in the final office action dated 10/28/03.

3. Applicant's arguments pertaining to the withdrawn status of claims 15-24 have been fully acknowledged in paragraph 12 of the "Response to Arguments" section of the present office action. Whether or not Applicant agrees or disagrees with the withdrawn status of these claims, the examiner encourages Applicant to use the "withdrawn" status identifier to avoid confusion throughout prosecution (see 37 CFR 1.121).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita (JP 61-36969; of record; w/ written translation) in view of the collective teachings of Hall (US 4135789; of record) and Hasegawa et al. (US 2001/0035496; of record), also in view of Matsumoto (US 5081347; of record), and also in view of Prince et al. (US 5510215).

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With respect to claim 1, all the limitations were fully addressed in paragraph 6 of the final office action, except precisely forming an edge of the aperture such that the chrome layer truncates an outermost peripheral edge of image information to be passed through the window.

*The examiner would first like to point out that Applicant's truncation of the image information is a direct result of forming an edge of the aperture in the chrome layer using a photoresist and etching techniques (p. 23, lines 20-24).

The device of Yamashita is a **solid image pick-up device**, specifically a CCD (charge coupling device), wherein the skilled artisan would have readily appreciated that such a device operates by transmitting optical image light (= image information) through the window 6 to the semiconductor chip 2. As set forth in paragraph 6 of the final office action, the teachings of Matsumoto would have motivated the skilled artisan to apply a chrome layer having an aperture therethrough to the window of Yamashita in order to prevent reflection. However, Matsumoto is silent as to precisely forming the aperture such that the chrome layer truncates an outermost peripheral edge of the image information being passed through the window.

Precisely forming a pattern on a substrate using a photoresist and etching techniques is well known and conventional in a variety of arts (i.e. integrated circuits, semiconductors, LCD's, electroluminescent displays, etc.). In fact, it is even known in the **solid-image pickup device** art to deposit a multi-layer dielectric (comprising metallic layers; column 6, lines 47-65) filter 410 onto the entire surface of a substrate 405, apply a photoresist 440 over the dielectric filter, and carry out etching to form apertures in select areas of the photoresist and underlying dielectric filter thereby precisely forming the dielectric filter on select portions of the substrate, as taught by Prince (Figures 4A-G; column 1, lines 17-18; column 5, lines 40-42; column 7, lines 3-20).

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Therefore, it would have been obvious to the skilled artisan at the time the invention was made to form the chrome layer on the window of Yamashita by depositing the chrome onto the entire surface of the window, applying a photoresist over the chrome, and carrying out etching to form the aperture through the chrome layer because such a precise pattern-forming technique is well known and conventional, even in the solid-image pickup device art as taught by Prince, and it eliminates the inconvenience and inaccuracy associated with trying to accurately deposit the chrome layer onto select portions of the window. Furthermore, the skilled artisan would have appreciated that, like the precisely formed aperture of the present invention, the precisely formed aperture of Yamashita would also truncate an outermost peripheral edge of the image information since it too is formed using a photoresist and etching techniques.

Regarding claim 11, see paragraph 6 of the final office action.

6. Regarding claims 2-3 and 4-10, see paragraphs 7-11 of the previous office action.
7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art referred to by Chun (US 5352852; of record) in view of Matsumoto and Prince et al.

With respect to claim 1, all the limitations were fully addressed in paragraph 12 of the final office action, except precisely forming an edge of the aperture such that the chrome layer truncates an outermost peripheral edge of image information to be passed through the window.

The device of the prior art referred to by Chun is a solid image pick-up device, specifically a CCD (charge coupling device), which operates by transmitting optical image light (= image information) through the window 7 to the semiconductor chip 1 (column 1, lines 13-15 and 62-65). As set forth in paragraph 12 of the final office action, the teachings of Matsumoto would have motivated the skilled artisan to apply a chrome layer having an aperture therethrough

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to the window of the prior art referred to by Chun in order to prevent reflection. However, Matsumoto is silent as to precisely forming the aperture such that the chrome layer truncates an outermost peripheral edge of the image information being passed through the window.

It would have been obvious to the skilled artisan at the time the invention was made to form the chrome layer on the window of the prior art referred to by Chun by depositing the chrome onto the entire surface of the window, applying a photoresist over the chrome, and carrying out etching to form the aperture through the chrome layer because such a pattern-forming technique is well known and conventional, even in the solid-image pickup device art as taught by Prince (see paragraph 5 above for complete discussion), and it eliminates the inconvenience and inaccuracy associated with trying to accurately deposit the chrome layer onto select portions of the window. Furthermore, the skilled artisan would have appreciated that, like the precisely formed aperture of the present invention, the precisely formed aperture of the prior art referred to by Chun would also truncate an outermost peripheral edge of the image information since it too is formed using a photoresist and etching techniques.

8. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art referred to by Chun in view of Tu et al. (US 6559539; of record), Matsumoto, and Prince et al., or alternatively, Tu et al. in view of the prior art referred to by Chun, Matsumoto, and Prince et al.

With respect to claim 1, please see paragraph 7 above and paragraph 13 of the final office action for the rejection using the prior art referred to by Chun in view of Tu et al. and Matsumoto.

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With respect to claim 1, please see paragraph 7 above and paragraph 13 of the final office action for the rejection of Tu in view of the prior art referred to by Chun and Matsumoto, while noting that Tu also teaches the device being a solid-state image sensor that operates by transmitting optical image signals (= information) through the window 32 to the semiconductor chip 26 (column 3, lines 8-16).

It would have been obvious to the skilled artisan at the time the invention was made to form the chrome layer on the window of Tu by depositing the chrome onto the entire surface of the window, applying a photoresist over the chrome, and carrying out etching to form the aperture through the chrome layer because such a pattern-forming technique is well known and conventional, even in the solid-image pickup device art as taught by Prince (see paragraph 5 above for complete discussion), and it eliminates the inconvenience and inaccuracy associated with trying to accurately deposit the chrome layer onto select portions of the window. Furthermore, the skilled artisan would have appreciated that, like the precisely formed aperture of the present invention, the precisely formed aperture of Tu would also truncate an outermost peripheral edge of the image information since it too is formed using a photoresist and etching techniques.

9. Regarding claims 2-11, please see paragraphs 15-19 of the final office action.

Allowable Subject Matter

10. Claims 12-14 are allowed.

Claims 12-14 are allowed for the reasons set forth in paragraph 20 of the final office action.

Response to Arguments

11. Applicant's arguments filed 3/29/04 have been fully considered but they are not persuasive.

12. On page 11 of the arguments, Applicant argues that the restriction is improper because Groups I and II both require that the sealing section have a lower melting point than the frame and the window and that the frame and window would be heated upon heating the sealing section.

The examiner does not disagree with Applicant's assertion that both Groups I and II require a sealing section having a lower melting point than the frame and window. However, Group I is directed to a method wherein heating of the window, frame and sealing section takes place, while Group II is directed to a product wherein such a method step is not being claimed and even if it were it would be given no weight (see MPEP § 2113).

Therefore, as set forth in paragraph 1 of the final office action, the product as claimed could be made by another and materially different process such as one where only the annular sealing section is heated by concentrated energy and the window and frame are not heated.

The requirement is still deemed proper and therefore remains FINAL.

13. On pages 12 and 14-15 of the arguments, Applicant argues that Matsumoto fails to teach precisely forming apertures in the chrome layer for the purpose provided in the claimed invention.

First, the examiner would like to point out that the present claims do not recite forming apertures in the chrome layer and therefore any argument pertaining thereto is not commensurate

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with the scope of the claimed invention. However, the examiner believes Applicant is referring to the formation of an aperture in the chrome layer and will address the above argument as so.

The examiner agrees that Matsumoto taken alone does not provide motivation to precisely form the aperture in the chrome layer such that the chrome layer truncates an outermost peripheral edge of image information passed through the window. However, the teachings of Prince did provide motivation to precisely form this aperture in the chrome layer using a photoresist and etching techniques, as set forth in paragraph 5 above.

Therefore, since the present invention discloses forming the aperture using a photoresist and etching techniques wherein the precisely formed edges of the aperture result in truncation of the image information, the skilled artisan would have appreciated that the formed edges of the aperture in the chrome layer of the applied references in view of Prince would also result in truncation of the image information, since they too would be precise due to their formation using a photoresist and etching techniques.

The examiner recognizes that Prince does not express a concern regarding truncation of image information. However, Prince does provide proper motivation to precisely form the edges of the aperture in the chrome layer of the applied references, as set forth in paragraph 5 above, and whether or not the resulting truncation of image information is the motivation for doing so or just a mere consequence thereof is irrelevant.

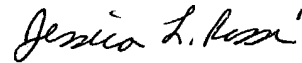
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **571-272-1223**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jessica L. Rossi
Patent Examiner
Art Unit 1733